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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,437	11/01/2005	Hendrikus Gerardus Boevenbrink	125519	8901
25944	7590	03/15/2006	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			TESKIN, FRED M	
			ART UNIT	PAPER NUMBER
			1713	
DATE MAILED: 03/15/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/552,437

Applicant(s)

BOEVENBRINK ET AL.

Examiner

Fred M. Teskin

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>120605</u> . | 6) <input type="checkbox"/> Other: ____. |

Art Unit: 1713

The preliminary amendment of October 6, 2005, has been entered in full. Claims 1-13 are currently pending and under examination.

The references cited in the Search Report dated 05 November 2004 have been considered. Though cited as particularly relevant in the Report, Documents D2-D5 are not being applied in any rejection herein, as they are considered cumulative at best to the prior art documents cited and applied *infra*.

The disclosure is objected to because of the following informalities: at page 9, line 1, there is a reference to T10 as "In the table," but no such notation is found in the referenced table. In this regard, note the occurrence of T1 in the heading of *both* the third and fourth columns of Table 1 on page 7.

Appropriate correction is required.

Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. More specifically, the following grounds for indefiniteness apply to the indicated claims.

(A) Claim 2 recites the limitation "the composition" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Art Unit: 1713

(B) Regarding claim 2, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

(C) Regarding claims 3-9 and 12, a broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 3 recites the broad recitation "at least 0.1 %", and the claim also recites "more preferably at least 0.5 %, most preferably 1 % ...," which is a narrower statement of the range/limitation. Similar instances of recitation of a broad range/limitation followed by a linking term (e.g., preferably) and then a narrower statement of the range/limitation are found in lines 4-5 of claim 3 and in each of claims 4-9 and 12.

Claims 12 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The expression “(co)polymer obtainable by a process according to claim 1...” renders claims 12-13 indefinite because almost any variation in any parameter within the scope of the claimed process would alter the (co)polymer produced. In consequence, one who made or used a (co)polymer made by a process other than the process recited in the parent claim would have to produce (co)polymers using all possible parameters within the scope of claim 1 – a practical impossibility – and then extensively analyze each product to determine if his (co)polymer was obtainable by a process within the claimed process. A claim is indefinite if undue experimentation is involved to determine the boundaries of protection. *Ex parte Tanksley*, 26 USPQ2d 1389. This rationale is applicable to the present case in view of the extensive testing that would be involved in ascertaining whether a (co)polymer made by a process different to that claimed is nevertheless obtainable by the claimed process.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

Art Unit: 1713

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-13 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5189069 to Speikamp et al ("Speikamp").

Speikamp is considered to disclose an "essentially vinyl chloride-free" suspension polymerization process for polymerizing styrene monomer, or a mixture of monomers including styrene, comprising the step of (semi-)continuously dosing an initiator, or mixture of initiators, from the point in time at which none of the monomer has been polymerized until at least 70 % of all monomer is polymerized, to the reaction mixture at the polymerization temperature. See col. 3, lines 15-20, 27-35 and 48-66; and Example 1. As to initiator half-life, it appears from the information in applicants' Table 1 that benzoyl peroxide is known to have a one hour half-life at 91°C. Speikamp

Art Unit: 1713

teaches a polymerization temperature of about 90°C (col. 3, line 28) and in Example 1, meters benzoyl peroxide, *inter alia*, into a reaction mixture heated to 90°C. Thus, at the polymerization temperature taught by Speikamp, the initiator employed therein would appear to possess a half life within claim 1.

As such, Speikamp is seen to describe an embodiment of applicants' process with sufficient specificity so as to render the indicated claims anticipated.

Claims 1 and 3-13 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US 6153658 to Paleja et al ("Paleja").

Paleja is considered to disclose an "essentially vinyl chloride-free" suspension polymerization process for polymerizing vinyl arene monomers like styrene, with semi-continuous dosing of a radical initiator having a half life of one hour in benzene at 70 to 110°C, from the point in time at which none of the monomer has been polymerized until at least 70 % of all monomer is polymerized, to the reaction mixture at the polymerization temperature. See col. 2, lines 3-15 and 56+; col. 3, lines 30+; col. 6, lines 5-15 and Examples 1-3 and 5. The described two-step initiator dosage procedure is seen to qualify as "semi-continuous" as per claims 1 and 6. As such, Paleja is seen to disclose an embodiment of the applicants' claimed process.

As to claims 12 and 13, Paleja teaches using expandable styrene polymer particles obtained by the described process in a shaping process (i.e., molding as per

Art Unit: 1713

column 5, lines 58+ and column 7, lines 50+) but does not characterize the polymer in terms of amount of residual initiator.

Nevertheless, since the claimed and prior art products are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness is established as to the claimed product. *In re Best*, 195 USPQ 430, 433 (CCPA 1977). When there is sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not. *In re Spada*, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as unpatentable over WO 00/17245 ("Van Swieten").

Relative to the residual initiator limitation of claim 12, Van Swieten explicitly discloses vinyl chloride (co)polymer characterized by less than 50 ppm of residual peroxide initiator, as measured immediately after drying under the recited conditions (1 hour at 60°C). See page 6, lines 15-21; page 12, Example 11 and pages 13-14, claims 6 and 7, the latter also describing a shaping process involving heating of the (co)polymer as recited in claim 13.

Though not specifically disclosed, a copolymer based on styrene and vinyl chloride would have been obvious to one of ordinary skill in the art, given that Van Swieten names styrene as one of but seven specific comonomers that can be present in the precursor monomer mixture along with vinyl chloride monomer (page 2, lines 20+).

Art Unit: 1713

While it is noted that claim 12 refers to "a process according to claim 1," which calls for an "essentially vinyl chloride-free" process, the claimed copolymer need only be "obtainable" by that process. The "obtainable" language opens claim 12 to styrene-based (co)polymers containing the specified level of residual initiator even when made by other processes. In consequence, claims 12/13 are considered readable on copolymer obtained by the obvious application of the Van Swieten process to polymerization of a monomer mixture comprising vinyl chloride and styrene comonomer.

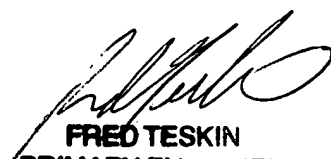
No claims are allowable at this time.

Any inquiry concerning this communication should be directed to Examiner F. M. Teskin whose telephone number is (571) 272-1116. The examiner can normally be reached on Monday through Thursday from 7:00 AM - 4:30 PM, and can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The appropriate fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

FMTeskin/12-10-04



FRED TESKIN
PRIMARY EXAMINER
1713